

BIBLIOGRAPHICAL NOTICES.

Preliminary Report on the Geology and Water Resources of Nebraska, west of the One-hundred-and-third Meridian. By N. H. DARTON. 71 pages, with 43 plates and 23 text-figures. 4to. Government Printing Office, Washington. 1903.

THIS is one ("No. 17") of the valuable "Professional Papers" issued by the U.S. Geological Survey, and designed for the supply of information on the geological structure of the country, and the prospect of obtaining underground water by boring, and surface water in large quantity by dams and irrigation.

The subject-matters in this memoir are treated in the following order:—

Topography, pp. 9-14.

Geology, pp. 14-43. The formations taken separately.

1. General Geology of Nebraska, pp. 14-21.

2. Geology of the region west of the 103rd meridian, pp. 21-43.

Underground water, pp. 43-47.

1. General conditions.

2. Water horizons.

3. Deep-seated waters.

Springs, p. 48; Streams, pp. 50-54; Irrigation, pp. 54-62.

Climate, p. 62; Timber, p. 62; List of Elevations, pp. 62-66; Index, p. 67.

The limits of the district concerned are first of all defined. It is the north-western part of Nebraska; bounded on the north by South Dakota, by Wyoming on the west, and by Colorado on the south. The region is a characteristic part of the Great Plains, which extend from the Rocky Mountains eastward. It may be referred to as having originally sloped gently to the east, and, when uplifted in early pleistocene times, the rivers excavated valleys across it, making the chief existing features, portions of the plain remaining as high tablelands between the valleys.

PLEISTOCENE	{	Alluvium.	}	
		Sand-hills.		
		Loess.		
		Drift.		
	{	<i>Equus</i> -beds.	}	
NEOCENE	{	Ogalalla formation (Pliocene).	}	= Loup Fork beds.
		Arikaree formation (Miocene).		
		Gering formation (Miocene).		
EOCENE (Oligocene?)	{	Brule Clay.	}	= White River group. <i>Titanotherium robustum</i> , pl. xxxv.
		Chadron formation.		
CRETACEOUS	{	Laramie formation.	}	= Montana group. <i>Inoceramus labiatus</i> , Schloth., and <i>Ostrea congesta</i> Conrad, [pl. xxxvi.
		Pierre Clay.		
		Niobrara formation.		
		Benton Shales.		
	{	Dakota Sandstone.	}	
CARBONIFEROUS	{	Permian limestone.	}	
		Cottonwood limestone.		
		Wabaunsee limestone.		

The relative positions, range, and thickness of these formations are well illustrated by maps and sections: the geography and geology of the region being shown in plates i. & ii. and ix. to xi, xxxvii. & xxxviii.; physical features being richly represented by numerous figures in the text and in plates.

The Alluvium is chiefly noticeable in the valleys, particularly in that of the Platte and its tributaries. The "Great Sand-hill district," in Central Nebraska (of 24,000 square miles), is composed of wind-borne sand largely derived from the Arikaree formation. Wide plains of Loess occupy nearly one third of Nebraska, and consist largely of Boulder-clay. The Ogalalla beds consist of calcareous grit and pebbles; and they have formed gravel when disintegrated. The Arikaree formation (about 430 feet) of sand and concretions, with conglomerate at base, contains also volcanic ash, and yields abundance of the curious *Demonidæ* or "Devil's Corkscrews." The concretions are frequently tubular, and there are channels in the sand filled with conglomerate. This formation weathers into the frequent upstanding and isolated pinnacles, stacks, chimneys, as well as butts and bluffs, forming remarkable and picturesque features in the region, as shown in many of the plates and figures. The Gering Sandstone varies considerably in thickness and in colour and hardness, and has conglomerate at the base.

The hard pinkish Brule Clay is about 600 feet thick, thinning eastwards. Then greenish sandy clay (Chadron formation) follows below, and is said to have yielded remains of *Titanotherium*.

Equivalents of the Laramie formation, extending for some way under South-western Nebraska, are sandstone and clay. The Pierre Clay, under the central-western part of the State, is at least 2000 feet thick. The Niobrara Chalky limestones and the Benton Shales are 450 feet thick to the east and thicker to the west. The Dakota Sandstone (with a basal Lower Cretaceous sandstone), about 400 feet thick, underlies nearly all Nebraska. "This formation carries the great artesian-water supplies, which are so extensively developed by wells in eastern South Dakota, and on low lands in Knox, Cedar, and Boyd counties, Nebraska" (page 9).

Volcanic ash constitutes two widespread beds in the Brule Clay, some limited and some thick beds in the Gering formation, and a general admixture as well as several thick beds in the Arikaree. It is rare in the Ogalalla, and it occurs in the lower portion of the Loess in the central and western parts of the State. The ash was probably blown over from volcanoes in the Rocky Mountains (pages 42 & 43).

Carboniferous limestones, shales, and sandstones underlie all Nebraska. The Cottonwood *Fusulina* limestone has been recognized. In the south-eastern corner of the State the sinkings have proved about 1200 feet, of which 200 is Permian.

At Lincoln the Lower Limestones (partly Devonian) are at 1635 feet; then Trenton Limestone to 1947. Then follow magnesian limestones 143 feet, then red sandstone (Cambrian) and red quartzite (Algonian, pierced for 270 feet), resting on granite.

A vast amount of valuable information, both special and general in character, has been collected and published by the State Survey, as exemplified in this volume; but it is not yet sufficiently easy to make a complete and definite judgment on the different districts, as to the possible underground water-supply, without the further experience and opinion of experts.

The Land and Sea Mammals of Middle America and the West Indies.

By DAVID GIRAUD ELLIOT, F.R.S.E. &c. Vol. IV. Parts I. & II. *Zoological Series, Field Columbian Museum.* Chicago, U.S.A., 1904.

THESE two bulky parts will prove of inestimable value to mammalogists, and form a lasting monument to the credit of the author. The more carefully they are studied, the more one becomes impressed by the amount of labour and research which must have been expended on their production.

The present work contains a description of all the mammals from the northern boundary of Mexico to the Province of Cauca, S. America, including the islands of the coast, as well as of the Bahamas and the West Indies.

A feature of these parts, as compared with that already issued on the mammals north of the area now dealt with, is the addition of short accounts of the habits of all the more important species, and many new facts will be found in these statements.

The author will gain the sympathy of a large number of zoologists in that he has chosen to protest vigorously against the system now in fashion of multiplying species—a system calculated to do an immense deal of harm. With some systematists, in fact, it is carried to the very verge of absurdity. Names, the author trenchantly remarks, “are useful for the recognition of specimens possessing independent distinctive characters, but if an example has none of these its appellation is of little assistance.” And, again, “It is, of course, not to be conceived . . . that the mere bestowal of a name upon a specimen would make it recognisable; and that the act of naming examples that are separated from their fellows on account of . . . minute variations cannot be fairly regarded as an ‘accurate statement of the results of organic evolution.’” As he points out, “Many specimens have been named whose cranial characters consist altogether in being ‘longer or shorter,’ ‘broader or narrower’ than the corresponding parts of some other example, and it is easily comprehended how slight is the probability that any specimen can be accurately determined whose characters are such as those given (the colour of the pelage also being nearly the same), no topotypes of the forms with which these are compared by their describer being available, and in many instances no measurements of the crania having been given.” The lengths to which some have carried this principle of bestowing names on what are at most individual variations is appalling. Evidence of this can be found in plenty in these volumes.

Illustrations have been lavishly distributed, and many, especially of the crania, are extremely beautiful.

Guide to the Gallery of Birds in the Department of Zoology of the British Museum (Natural History). Pp. 228; 24 plates and 7 text-figures. London: Printed by Order of the Trustees of the British Museum, 1905. Price 2s. 6d.

THE Bird-Gallery of the British Museum of Natural History is, without doubt, one of the finest in the world; and this not on account of any architectural beauties which it possesses, but solely because of the remarkable character of the specimens selected for exhibition and the method of their display. Inasmuch as the arrangement of the Gallery is the work of Mr. W. R. Ogilvie-Grant, it was but fitting that the preparation of the Guide thereto should also be entrusted to him. How admirably he has fulfilled his task will best be appreciated by those who use this book in the Museum. But the value of this volume is by no means confined to its use there. On the contrary, it will prove of the greatest service even to those who have never seen the specimens herein described. Profusely and beautifully illustrated and crammed with information, much of which is not to be found elsewhere, it will form a welcome addition to the library of many a bird-lover throughout the country. Museum Curators will find it indispensable.

As the visitor works his way down the Gallery, book in hand, he will find each Order of birds briefly diagnosed, and following this a description of all the more important species, their habits, and so on.

The wonderful Nesting-Series of British Birds is described separately; and, in addition to this, there is an appendix wherein will be found a general introduction to the study of birds, which should prove most valuable to those who are not experts.

The beautiful plates which illustrate this Guide have been photographed by Mr. R. B. Lodge from specimens actually exhibited in the Gallery.

House, Garden, and Field. By I. C. MIALL, F.R.S.
London: Edward Arnold, 1904.

PROFESSOR MIALL has an established reputation as a writer on Natural History subjects, and this reputation is amply sustained in his latest work 'House, Garden, and Field.' In the space of some three hundred pages he has crowded a vast amount of information, in the form of short essays, on themes of the most varied description.

Designed more especially for teachers who are compelled, without special qualification, to give lessons in "Nature Study," Prof. Miall has endeavoured rather to give his readers an insight into what to observe, and how to observe, than to provide him with ready-made lessons. As he rightly remarks, the teacher must himself be an observer if his teaching is to be stimulating. If, as he says, he "gets all his knowledge without effort, then the so-called Nature Study which he dispenses has no more power to

excite the love of nature or the spirit of enquiry than a printed list of the Kings of England with dates." The introduction, indeed, to this volume forms an admirable dissertation on the teaching of this much-abused subject, and should be carefully studied by all those for whom it is written. The present demand for books on Nature Study has unfortunately produced an abundant crop of most pernicious rubbish, which, strange as it may appear, has been greedily absorbed by those responsible for the education of our children. Professor Miall's book is therefore to be welcomed as an antidote to this poisonous stuff.

We cannot do more here, by way of indicating the nature of these essays, than particularize one or two. As especially helpful we may mention that on "A School Course on the Structure and Life of Insects." Though short, it is altogether admirable; and his hints on methods of displaying insect-structures to many people at once will doubtless be gladly adopted. School Museums; Buttercups—a Study of Species; Vacation Rambles; The Summer droop of Boughs; The Rock-Barnacle; and The Natural History Excursion, are all essays of real excellence and full of helpful suggestions.

In short, this is a book which we most cordially recommend—not only to teachers, but to dwellers alike in town and country who have a love of Nature and but little training or practice in the way to observe.

The illustrations are numerous and good, and the size of the volume is sufficiently small to be carried conveniently as a guide to practical work out of doors. W. P. P.

MISCELLANEOUS.

Note on the 'Museum Humfredianum,' 1779.

By C. DAVIES SHERBORN.

THE rarity of sale-catalogues of the early collections in which zoological specimens were preserved is well-known. After diligent search during the time I was compiling my 'Index Animalium,' one by one fell into my hands, until at last the 'Museum Humfredianum' was the only one to escape me.

Mentioned first by Cobres in his 'Deliciæ Cobresianæ,' 1782, p. 148; then by Fox in his 'Synopsis Newcastle Museum,' 1827, p. 179; it was again listed by Engelmann in 'Bibl. Hist. Nat.' 1846, p. 11. These, so far as I know, are the only references to the Catalogue, though the Museum itself has been referred to many times (see Murray, 'Museums,' 1904, ii. p. 293 *etc.*). There is no doubt that Cobres actually saw the tract, for he gives the pagination correctly, although he is in error as to the size; but it is highly probable that Engelmann copied from Cobres. Fox, too,